

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A method of controlling torque output of an engine, comprising:

calculating a desired air-per-cylinder (APC) based on a torque command;

determining an effective throttle area corresponding to said desired APC independent of a mass air flow and a manifold absolute pressure and based on a non-dimensionalized model; and

regulating a throttle based on said effective throttle area.
2. (Original) The method of claim 1 wherein said step of determining said effective throttle area includes establishing an effective throttle area look-up table based on said non-dimensionalized model.
3. (Original) The method of claim 1 wherein said effective throttle area is based on said desired APC, an engine speed, an ambient temperature and an ambient pressure.
4. (Original) The method of claim 1 further comprising:

measuring an actual APC; and

adjusting said effective throttle area based on said actual APC.

5. (Original) The method of claim 4 wherein said step of adjusting said effective throttle area further includes calculating an APC error based on a difference between said desired APC and said actual APC.
6. (Original) The method of claim 5 further comprising:
determining a throttle area correction based on said APC error; and
summing said effective throttle area and said throttle area adjustment.
7. (Currently Amended) A system to control torque output of an engine, comprising:
a throttle that regulates airflow into said engine; and
a controller that calculates a desired air-per-cylinder (APC) based on a torque command, that determines an effective throttle area corresponding to said desired APC independent of a mass air flow and a manifold absolute pressure and based on a non-dimensionalized model and that regulates said throttle based on said effective throttle area.
8. (Original) The system of claim 7 wherein said controller determines said effective throttle area using an effective throttle area look-up table that is based on said non-dimensionalized model.

9. (Original) The system of claim 7 further comprising:
an engine speed sensor that generates an engine speed signal;
an ambient temperature sensor that generates an ambient temperature signal;
and
an ambient pressure sensor that generates an ambient pressure signal, wherein
said effective throttle area is based on said desired APC, said engine speed signal, said
ambient temperature signal and said ambient pressure signal.
10. (Original) The system of claim 7 further comprising a manifold air flow (MAF)
sensor that measures an actual APC, wherein said controller adjusts said effective
throttle area based on said actual APC.
11. (Original) The system of claim 10 wherein said controller calculates an APC
error based on a difference between said desired APC and said actual APC.
12. (Original) The method of claim 11 wherein said controller determines a
throttle area correction based on said APC error and sums said effective throttle area
and said throttle area adjustment.

13. (Currently Amended) A method of regulating mass airflow through a throttle to control torque output of an engine, comprising:

generating a torque command signal;

calculating a desired air-per-cylinder (APC) based on said torque command signal;

determining a desired throttle area independent of a mass air flow and a manifold absolute pressure and based on a non-dimensionalized model and said desired APC;

determining a throttle area adjustment based on an actual APC;

calculating an effective throttle area based on said desired throttle area and said throttle area adjustment; and

regulating said throttle to provide said effective throttle area.

14. (Original) The method of claim 13 further comprising establishing a desired throttle area look-up table based on a non-dimensionalized model.

15. (Currently Amended) The method of claim ~~14~~ 15 further comprising determining said desired throttle area using said look-up table.

16. (Original) The method of claim 13 wherein said desired throttle area is further based on an engine speed, an ambient temperature and an ambient pressure.

17. (Original) The method of claim 13 further comprising monitoring an actual APC, wherein said throttle area adjustment is based on said actual APC.

18. (Original) The method of claim 17 wherein said throttle area adjustment is based on a difference between said actual APC and said desired APC.

19. (Original) The method of claim 13 wherein said step of calculating an effective throttle area includes summing said desired throttle area and said throttle area adjustment.